

Telephone Interview Agenda
Application: 10/717,941

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Differences between the present invention and the cited prior art

Talati (2004/0044997) teaches downloading new code to a shadow area and then copying the new code over old code in a runtime area.

DeKoning (6,085,333) teaches synchronizing operating code for multiple controllers. A native controller creates an image of its operating code and copies it to a new spare controller.

Moore (2003/0092438) teaches coordinating version format conversions.

Zimmer (2003/0120900) teaches bootstrapping a volume top file upon initialization of a boot routine.

Hiller (6,658,659) teaches loading specified versions of software. The software includes compatibility information. The compatibility information may be compatibility vectors of compatible software versions.

The present invention loads a new code image to a temporary memory location, identifies and reconciles incompatibilities between old code and new code from the new code image, and loads the new code image. The present invention is distinguished in transferring control to the new code image to identify and resolve the incompatibilities. In addition, the claimed invention is distinguished by identifying incompatibilities from size and location differences, and in reconciling incompatibilities by changing an initialization order.

Proposed Amendment

1. An apparatus for updating a code image, comprising:

a processor executing executable code stored on a main memory occupied by and used by an old code image and a temporary memory separate from the main memory, the executable code comprising

a loader stored in the main memory, configuring the temporary memory so that the executable code is executed directly from the temporary memory, and loading a new code image into the temporary memory;

a branch module stored in the main memory causing the processor to execute a bootstrap module within the new code image;

the bootstrap module identifying incompatibilities between the old code image and the new code image from version information, a difference in initialization requirements, and a difference in size and location between the old code image and the new code image, and by accessing capability information for the old code image and capability information for the new code image and identifying a difference between the capability information, and reconciling the incompatibilities by changing an initialization order, converting a format of a data structure of the old code image to a format compatible with a data structure of the new code image, and associating persistent data of the old code image with the new code image, such that the persistent data is available in response to execution of a run-time segment of the new code image; and

a copy module copying the new code image into the main memory space occupied by the old code image.

31. The apparatus of claim 1, wherein the loader configures the temporary memory so that the executable code is executed directly from the temporary memory, the executable code further comprising an update module stored in the main memory maintaining an old code image pointer, a new code image pointer, capability fields storing the capability information, an old code image version number, a new code image version number, the old code image pointer, the new code image pointer, the capability fields, the old code image version number, and the new code image

version number used by the bootstrap module, wherein the bootstrap module follows the old code image pointer to locate an old code image header and a version field within the old code image header and follows the new code image pointer to locate a new code image header and a version field within the new code image header, the old code image header and the new code image header are organized according to the Microcode Reconstruct and Boot format, the bootstrap module reading the capability information from the old code image and the new code image and storing the capability information of the old code image and the new code image in the capability fields, the capability information comprising an indication that an EMULEX FLASH RAM is provided, the persistent data comprising login tables, and wherein reconciling incompatibilities between the old code image and the new code image further comprises adjusting configuration settings and parameter lists.